

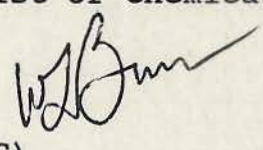


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 19 1997

MEMORANDUM:

SUBJECT: Office of Pesticide Programs List of Chemicals Evaluated
for Carcinogenic Potential

FROM: William L. Burnam, Chief 
Science Analysis Branch
Health Effects Division (7509C)

TO: Health Effects Division Branch Chiefs
Section Heads, Health Effects Division
Deputy Director, Health Effects Division
Director, Registration Division
Director, Special Review & Reregistration Division
Esther Rinde, Manager, Carcinogenicity Peer Review Committee

The attached list provides a quick overview of compounds evaluated for carcinogenicity by the Health Effects Division (HED) of the Office of Pesticide Programs (OPP). Chemicals evaluated by other review groups are listed as well and HED looks to these evaluations until an internal HED evaluation has been performed. Since the evaluation of many of these chemicals is an ongoing process, the information on this list may change and become out of date, i.e., the classification and Q_1^* may change. Therefore, the list should not be used as the sole reference, without checking on the present status of a compound. Updated lists will be distributed in the future on a semi-annual basis.

Unless otherwise indicated, the classification of chemicals is based on the HED carcinogen peer review process or the HED RfD peer review process, applying the Agency guidelines for carcinogenicity assessment. Evaluations by other groups are indicated by their acronyms: CAG, CRAVE, IARC, ORD, SAB and SAP. For those chemicals where different classifications were suggested by different groups the "final" OPP classification is listed under the column Current OPP Classification. The Potency Q_1^* , unless otherwise indicated, is oral. The units for the oral and inhalation Potency Q_1^* are $(\text{mg/kg/day})^{-1}$ and $(\text{ug/cu.m})^{-1}$, respectively.

If any corrections are necessary or further information is required please contact Rick Whiting (703-305-5473) or myself (703-305-6193).



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CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
2,4-D CAS No. 94-75-7 EPA Chem Code: 030001	D	Brain astrocytomas; F344/CrL-Br rats (M)		D		Classification pending repeat of studies & additional epidemiological data. [Syn. 2,4-Dichlorophenoxyacetic acid]
2-Benzyl-4-chlorophenol CAS No. 120-32-1 EPA Chem Code: 062201	C	Renal tubule combined adenomas/carcinomas; B6C3F1 mice (M). Renal transitional cell carcinomas; F344/N rats (F).				[Syn. OBCP, o-Benzyl-p-chlorophenol]
AC 263222 (Cadre herbicide) CAS No. 81334-60-3 EPA Chem Code: 129041	E					Studies were conducted using the free acid form of AC 263222. The PC Code & CASRN for the ammonium salt is 128943 & 104098-49-9, respectively.
Acephate CAS No. 30560-19-1 EPA Chem Code: 103301	C	Hepatocellular carcinomas; CD-1 mice (F)			C	CRAVE Q* = 8.7 E-3 (O).
Acetaldehyde CAS No. 75-07-0 EPA Chem Code: 202300	B2 (CRAVE)	Nasal tumors; SPF Wistar rats (M & F). Laryngeal tumors; Syrian Golden hamsters (M & F).	2.2 E-6 (I)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
Acetamide CAS No. 60-35-5 EPA Chem Code:	C	Liver tumors; Wistar rats (M); F344 rats (M & F).				Acetamide (not itself a pesticide) is a metabolite of pesticides Methomyl & Thiodicarb.
Acetochlor CAS No. 34256-82-1 EPA Chem Code: 121601	B2	Nasal epithelium adenomas, thyroid cell adenoma, benign chondra of femur, basal cell tumor of stomach; CD rats (M & F). Pulmonary adenomas (M & F); liver tumors (M); CD-1 mice.	1.69 E-2	B2	Pend.	
Acetone CAS No. 67-64-1 EPA Chem Code: 044101	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans or animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Acetophenone CAS No. 98-86-2 EPA Chem Code: 129033	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans or animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Acifluorfen, sodium CAS No. 62476-59-9 EPA Chem Code: 121601	B2	Liver; B6C3F1 & CD-1 mice (M & F). Stomach papillomas; B6C3F1 mice (M & F).	1.07 E-1	B2/C	Pend.	Syn. Tackle & Blazer
Acrinathrin CAS No. 101007-06-1 EPA Chem Code: 129141	D					RFDC concluded that dose selection in the 2-year rat study was inadequate.

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRABE CLASS	COMMENTS
Acrolein CAS No. 107-02-8 EPA Chem Code: 000701	C	Adrenal cortical adenomas; Fischer 344 rats (F).			C	Classification is also based on carcinogenic potential of metabolite, Glycidaldehyde. This assessment is located on IRIS. OPP has not reviewed this chemical.
Acrylamide CAS No. 79-06-1 EPA Chem Code: 600008	B2 (CRABE)	Benign &/or malignant tumors at multiple sites in M & F rats (F344), & carcinogenic effects in a series of 1-year limited bioassays in mice (SENCAR, Swiss-ICR & A/J strains) by several routes of exposures.	4.5 E+0 (0) 1.3 E-3 (1)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
Acrylonitrile CAS No. 107-13-1 EPA Chem Code: 000601	B1 (CRABE)	Significant increase in incidence of lung cancer in exposed workers & observation of tumors, generally astrocytomas in the brain, in 2 rat strains exposed by various routes (water, gavage, inhalation).	5.4 E-1 (0) 6.8 E-5 (1)		B1	This assessment is located on IRIS. OPP has not reviewed this chemical.
Alachlor CAS No. 15972-60-8 EPA Chem Code: 090501	Unclassified carcinogen			B2		HCPRC recommended to defer classification until the new Cancer Assessment Guidelines are finalized. HCPRC also recommended using the MOE methodology for the estimation of human risk.
Aldicarb (Temik) CAS No. 116-06-3 EPA Chem Code: 098301	D (CRABE)	Significant trend in pituitary tumor; F344 rats (F). Significant trend in fibrosarcomas; B6C3F1 mice (M).			D	Both assays used less than maximum tolerated doses & therefore are inadequate to assess the carcinogenic potential of aldicarb. This assessment is located on IRIS. OPP has not reviewed this chemical.
Aldrin CAS No. 309-00-2 EPA Chem Code: 045101	B2 (CRABE)	Liver carcinomas; C3HeB/Fe mice (M & F); Hepatic hyperlasia & benign hepatomas; C3H mice (M & F); Hepatocellular carcinomas; B6C3F1 mice (M).	1.7 E+1 (0) 4.9 E-3 (1)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
Aminopyridine, 4- CAS No. 504-24-5 EPA Chem Code: 069203	D (CRABE)				D	Assessment based on lack of data concerning carcinogenicity in humans or animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Amitraz (Baam) CAS No. 33089-61-1 EPA Chem Code: 106201	C	Lymphoreticular tumors; CFLP mice (F); Hepatocellular adenomas, carcinomas & adenomas/carcinomas combined; B6C3F1 mice (F); Lung adenomas; B6C3F1 mice (M).	4.97 E-2	D		
Amitrole CAS No. 61-82-5 EPA Chem Code: 004401	B2 2B (IARC)	Thyroid (malignant & benign tumors); Charworth Farms, Fischer 344 & Wistar rats (M & F). Liver (malignant & benign tumors); B6C3F1 & NMRI mice (M & F)	1.13 E-0			

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRABE CLASS	COMMENTS
Aniline CAS No. 62-53-3 EPA Chem Code: 251400	B2 (CRABE)	Induction of tumors of the spleen and the body cavity in 2 strains of rat (CD-F & Fischer 344).	5.7 E-3		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
Aramite CAS No. 140-57-8 EPA Chem Code: 062501	B2 (CRABE)	Liver tumors &/or neoplastic nodules in 3 strains of M & F rats (FDRL, CFN & Osborne-Mendel) & M of one strain of mice (C57BL/6xC3H/Anf)F1. Extrahepatic biliary system tumors in dogs (mongrel).	2.5 E-2 (0) 7.1 E-6 (1)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
Asulam CAS No. 3337-71-1 EPA Chem Code: 106901	C	Malignant thyroid C-cell tumors; Benign adrenal pheochromocytomas; Sprague-Dawley rats (M).				
Atrazine CAS No. 1912-24-9 EPA Chem Code: 080803	C(q) 2B (IARC)	Mammary tumors (fibroadenoma/adenocarcinomas); Sprague-Dawley rats (F).	2.22 E-1	C	Pend.	
Avermectin B1 CAS No. 65195-55-3 EPA Chem Code: 122804	E					
Azinphos-methyl (Guthion) CAS No. 86-50-0 EPA Chem Code: 058001	E					Repeat of rat carcinogenicity study is requested.
Azobenzene CAS No. 103-33-3 EPA Chem Code: 007401	B2 (CRABE)	Invasive sarcomas in the spleen & other abdominal organs; F344 rats (M & F).	1.1 E-1 (0) 3.1 E-5 (1)		B2	Azobene is genotoxic & may be converted to benzidine, a known human carcinogen, under the acidic conditions in the stomach. This assessment is located on IRIS. OPP has not reviewed this chemical.
Bardac 22 (also 2250, 2280) CAS No. 7173-51-5 EPA Chem Code: 069149	E					
Baygon (Propoxur) CAS No. 114-26-1 EPA Chem Code: 047802	B2	Bladder carcinomas (rare), papillomas & combined carcinoma/papilloma (M&F); Wistar rats. Statistically significant increases in hepatocellular adenomas & combined adenoma/carcinoma; B6C3F1 mice (M).	3.7 E-3		Pend.	HCPRC recommended the low dose extrapolation model applied to the animal data be used for the quantification of human risk (Q1*).
Benomyl CAS No. 17804-35-2 EPA Chem Code: 099101	C(q)	Liver tumors (hepatocellular adenomas & carcinomas) in 2 genetically related strains of mice (CD-1 & Swiss SPF) (M & F)	4.2 E-3	C		Benomyl rapidly hydrolyses to MBC in an aqueous environment. MBC also appears to be the initial metabolite in mammalian systems. MBC has similar or increased toxicity, both acute & chronic, to Benomyl.
Bentazon (Basagran) CAS No. 25057-89-0 EPA Chem Code: 275200	E					

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Benzene CAS No. 71-43-2 EPA Chem Code: 008801	A (CRAVE)	Increased incidence of nonlymphocytic leukemia from occupational exposure; Human Increased incidence of neoplasia in rats & mice exposed by inhalation & gavage.	2.9 E-2 (0) 8.3 E-6 (1)		A	This assessment is located on IRIS. OPP has not reviewed this chemical.
Benzoic acid CAS No. 65-85-0 EPA Chem Code: 009101	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans & inadequate animal data. This assessment is located on IRIS. OPP has not reviewed this chemical.
Bifenthrin (Talstar) CAS No. 82657-04-3 EPA Chem Code: 128825	C	Hemangiopericytomas in the urinary bladder Hepatocellular carcinomas & combined hepatocellular adenomas & carcinomas; Swiss Webster mice (M)		C	Def.	
Biphenyl, 1,1- CAS No. 92-52-4 EPA Chem Code: 017002	D (CRAVE)				D	Assessment based on the lack data concerning carcinogenicity in humans & inadequate animal data. This assessment is located on IRIS. OPP has not reviewed this chemical.
Bis(chloroethyl)ether (BCEE) CAS No. 111-14-4 EPA Chem Code: 029501	B2 (CRAVE)	Increased evidence of hepatomas; (C57B1/6 x C3H/Anf)F1 mice (M & F) and (C57B1/6 x AKR)F1 mice (M).	1.1 E+0 (0) 3.3 E-4 (1)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical. [Syn. Dichloroethyl ether]
Borax CAS No. 1303-96-4 EPA Chem Code: 011102	E					
Boric acid CAS No. 10043-35-3 EPA Chem Code: 011001	E					
Boron CAS No. 7440-42-8 EPA Chem Code: 128945	E					
Bromacil CAS No. 314-40-9 EPA Chem Code: 012301	C	Liver tumors (carcinomas & combined adenomas/carcinomas); CD-1 mice (M). Thyroid tumors (C-cell adenomas & follicular cell combined adenomas/carcinomas); Crl:CD (BR) rats (M).				
Bromotrichloromethane CAS No. 75-62-7 EPA Chem Code: 008708	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans or animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Bromoxynil CAS No. 1689-84-5 EPA Chem Code: 035301	C	Liver adenomas & carcinomas; Swiss albino mice (M)	1.03 E-1	D		

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRABE CLASS	COMMENTS
Bromuconazole CAS No. 116255-48-2 EPA Chem Code: 120503	E					
Bronopol CAS No. 52-51-7 EPA Chem Code: 216400	E					
Butylate (Sutan) CAS No. 2008-41-5 EPA Chem Code: 041405	E					
Cacodylic acid CAS No. 75-60-5 EPA Chem Code: 012501	B2	Urinary bladder tumor; Fischer 344 rats (M & F). Fibrosarcomas (multiple organs); B6C3F1 mice (F).	6.23 E-2		D	
Cadmium CAS No. 7440-43-9 EPA Chem Code:	B1 (CRABE) 1 (IARC)	Limited evidence from occupational epidemiologic studies. Evidence of carcinogenicity in rats & mice by inhalation & intramuscular & subcutaneous injection.	1.8 E-3 (1)		B1	This assessment is located on IRIS. OPP has not reviewed this chemical.
Calcium cyanamide CAS No. 156-62-7 EPA Chem Code: 014001	C(q)	Ovarian granulosa-theca tumors; CRL:CD-1 (ICR)BR mice (F) [Hydrogen cyanamide]. Positive trend in hemangiosarcomas; B6C3F1 mice (M) [Calcium cyanamide]	6.74 E-2			Calcium cyanamide is rapidly & quantitatively converted to Hydrogen cyanamide in solution & at the pH of the human & rodent gut. Thus, Calcium cyanamide studies were used as supporting data for Hydrogen cyanamide.
Captafol CAS No. 2939-80-2 EPA Chem Code: 081701	B2 2A (IARC)	Lymphosarcomas & hemangiosarcomas (M & F), harderian gland adenomas (M) CD-1 mice. Mammary fibroadenoma (M & F), renal adenomas/carcinomas (combined) (M) Sprague-Dawley rats.	5.1 E-2			
Captan CAS No. 133-06-2 EPA Chem Code: 081301	B2	Renal cortical/tubular cell neoplasms; CD rats (M); Uterine sarcomas; Wistar rats (F). Intestinal tumors (M & F); B6C3F1, ICR CD-1 & CR CD-1 mice.	1.21 E-3	B2	Pend.	
Carbaryl CAS No. 63-25-2 EPA Chem Code: 056801	C(q)	Hemangiosarcomas (malignant vascular tumors) & combined hemangiomas/hemangiosarcomas; CRL:CD-1 (ICR)BR mice (M).	2.27 E-2			Carbaryl also induced tumors at multiple organ sites in mice & rats but at dose levels considered to be excessively toxic for carcinogenicity testing.
Carbon tetrachloride CAS No. 56-23-5 EPA Chem Code: 016501	B2 (CRABE)	Hepatocellular carcinomas; Osborne-Mendel, Japanese & Wistar rats; B6C3F1, C3H, A, Y, C and L mice; Syrian golden hamsters	1.3 E-1 (0) 1.5 E-5 (1)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
Chloramben CAS No. 133-90-4 EPA Chem Code: 029901	Deferred					HCPRC requested reviewer to re-tabulate data for both NCI studies; including data for pooled controls & results of the data audit; historical controls are also required. Rereview 1979 rat study & 1978 mouse study.

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRVE CLASS	COMMENTS
Chlordane CAS No. 57-74-9 EPA Chem Code: 058201	B2 (CRVE) 2B (IARC)	Benign & malignant liver tumors; C57B1/6N, CD-1, B6C3F1 & ICR mice (M & F); F344 rats (M).	1.3 E+0 (0) 3.7 E-4 (1)		B2	Chlordane is structurally related to other known liver carcinogens. This assessment is located on IRIS. OPP has not reviewed this chemical.
Chlordimeform CAS No. 6164-98-3 EPA Chem Code: 059701	B2 3 (IARC)	Malignant hemangioendothelomas; Tif:MAG: SPF mice (M & F)	1.3 (diet) 9.4 E-1			Tumor was observed in 3 studies - Chlordimeform & its two metabolites [N-formyl-4 chloro-o-toluidine & 5-CAT]. Q* of 9.4 E-1 is for occupational.
Chlorfenapyr (Pirate) CAS No. 122453-70-0 EPA Chem Code: 129093	Cannot Be Determined - Suggestive	The overall evidence in animals was not persuasive, but could not be dismissed. Increase in tumors in rats occurred with significant positive trends only, and mainly at the highest dose.				
Chloroaniline, p- CAS No. 106-47-8 EPA Chem Code: 017203	B2 2B (IARC)	Spleen (fibrosarcomas, hemangiosarcomas & osteosarcomas) (M); Adrenal (pheochromocytomas) (M&F); F344/N rats. Hepatocellular adenomas/carcinomas (M); Hemangiosarcomas in spleen &/or liver (M); B6C3F1 mice	6.38 E-2			p-Chloroaniline is a metabolite of Dimilin.
Chlorobenzene CAS No. 108-90-7 EPA Chem Code: 056504	D (CRVE)				D	Assessment is based on lack of human data, inadequate animal data & predominantly negative genetic toxicity data. This assessment is located on IRIS. OPP has not reviewed this chemical.
Chlorobenzilate CAS No. 510-15-6 EPA Chem Code: 028801	3 (IARC)					
Chloroform CAS No. 97-66-3 EPA Chem Code: 020701	B2 (CRVE)	Kidney tumors; Osborne-Mendel rats (M). Hepatocellular carcinomas; B6C3F1 mice (M & F); Hepatomas; A and NLC strain mice (F).	6.1 E-3 (0) 2.3 E-5 (1)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
Chlorothalonil CAS No. 1897-45-6 EPA Chem Code: 081901	B2 3 (IARC)	Renal adenomas & carcinomas (M & F); Forestomach papillomas (F); Fischer 344 rats; Renal adenomas/carcinoma; Osborne Mendel (M & F). Renal (F); Forestomach (M & F); CD-1 mice	7.7 E-3	Defer.	Pend.	HCPRC recommended that a low dose extrapolation model be applied to the animal data for quantification of human risk.
Chlorpropham (CIPC) CAS No. 101-21-3 EPA Chem Code: 018301	E					
Chlorpyrifos CAS No. 2921-88-2 EPA Chem Code: 059101	E					

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Cinch (Cinmethylin) CAS No. 87818-31-3 EPA Chem Code: 128837	D			D		HCPRC concluded there was no substantial biological evidence of tumor formation in mice or rats, however, dosing in both studies were inadequate for determining carcinogenic potential. Additional studies are requested.
Clofentezine (Apollo) CAS No. 74115-24-5 EPA Chem Code: 125501	C	Thyroid follicular cell adenoma/carcinoma Sprague-Dawley rat (M).		D	C	
Copper (metallic) CAS No. 7440-50-8 EPA Chem Code: 022501	D (CRAVE)				D	Assessment based on lack of human data & inadequate animal data from assays of copper compounds. This assessment is located on IRIS. OPP has not reviewed this chemical.
Coumaphos CAS No. 56-72-4 EPA Chem Code: 036501	E					
Creosote CAS No. 8001-58-9 EPA Chem Code: 025004	B1 (CRAVE)	Limited evidence of the association between occupational creosote contact & subsequent tumor formation, sufficient evidence of local & distant tumor formation after dermal application to mice.			B1	This assessment is located on IRIS. OPP has not reviewed this chemical.
Cresol, p-Chloro-m- CAS No. 59-50-7 EPA Chem Code: 064206	D					HCPRC concluded the evidence is inadequate & cannot be interpreted as showing either the presence or absence of a carcinogenic effect.
Cryolite (Kryocide) CAS No. 15096-52-3 EPA Chem Code: 075101	D					Assessment based on inadequate animal data.
Cyanazine (Bladex) CAS No. 21725-46-2 EPA Chem Code: 100101	C(q)	Mammary gland tumors (adenocarcinoma, carcinosarcoma); Sprague-Dawley rat (F).	1.0 E-0		Pend.	
Cyhalothrin/Karate CAS No. 68085-85-8 EPA Chem Code: 128867	D					Due to the equivocal nature of the findings in the mouse study & in view of the inadequacy of the dose levels tested, the RFDC concluded that the chemical should be classified as a "Group D."
Cypermethrin CAS No. 52315-07-8 EPA Chem Code: 109702	C	Benign lung adenomas (increase in both adenomas & adenomas/carcinomas combined); Alderly Park SPF Swiss strain mice (F)				
Cyproconazole (SAN 619F) CAS No. 94361-06-5 EPA Chem Code: 128993	B2	Hepatocellular adenomas & carcinomas; CD-1 mice (M & F).	3.02 E-1			Assessment also based on the possible clastogenic activity of Cyproconazole, tumors in mice & rats administered structurally-related analogues from same chemical class & lack of adequate rat carcinogenicity study.

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Cyromazine (Larvadex) CAS No. 66215-27-8 EPA Chem Code: 121301	E					Metabolite is Melamine.
DBCP CAS No. 96-12-8 EPA Chem Code: 011301	B2 (CAG)	Liver, kidney, stomach, nasal; Osborne-Mendel & Fischer 344 rats	1.4 E-0 (O) 8.3 E-0 (I)		Pend.	OPP has not reviewed this chemical. [Syn. Dibromo-3-chloropropane, 1,2-]
DDD CAS No. 72-54-8 EPA Chem Code: 029101	B2 (CRAVE) 2B (IARC)	Lung tumors (M & F), liver tumors (M); CF-1 mice. Thyroid tumors (follicular cell adenomas & carcinomas); Osborne-Mendel rats (M).	2.4 E-1		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
DDE CAS No. 72-55-9 EPA Chem Code:	B2 (CRAVE) 2B (IARC)	Liver tumors; B6C3F1 mice (hepatocellular carcinomas) (M & F); CF-1 mice (hepatomas) (M & F). Liver (neoplastic nodules); Syrian Golden Hamsters (M & F). Thyroid tumors; Osborne-Mendel rats (F).	3.4 E-1		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
DDT CAS No. 50-29-3 EPA Chem Code: 029201	B2 (CRAVE) 2B (IARC)	Tumors (generally of the liver) were observed in 7 studies in various mouse strains [BALB/C, CF-1, A strain, Swiss/Bomaby & (C57B1)x(C3HxAKR)] & in 3 rat studies (Wistar, MRC Porton & Osborne-Mendel).	3.4 E-1 (O) 9.7 E-5 (I)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
DEET CAS No. 134-62-3 EPA Chem Code: 080301	D					Dosing for male rats was considered inadequate. [Syn. N,N-Diethyl-metatoluamide]
Dacthal (DCPA) CAS No. 1861-32-1 EPA Chem Code: 078701	C(q)	Thyroid tumors (M & F); Hepatocellular adenoma/carcinoma/hepatocholangiocarcinoma (F); Sprague-Dawley rats. Hepatocellular adenomas & combined adenoma/carcinoma; CD-1 mice (F).	1.49 E-3			
Daminozide (Alar) CAS No. 1596-84-5 EPA Chem Code: 035101	B2	Multiple sites (eg. lungs, vessels, liver & kidney); Multiple species, strains & studies.	8.7 E-3	Defer.		SAP recommended repeating carcinogenicity studies.
Dazomet CAS No. 533-74-4 EPA Chem Code: 035602	D	Equivocal evidence of hepatocellular tumors; B6C3F1 mice (F).				The HCPRC noted that the existing genotoxicity data for Dazomet are predominantly positive, & concluded additional testing may be necessary, if there are significant changes in use patterns.
Desmedipham CAS No. 13684-56-5 EPA Chem Code: 104801	E					

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Di(2-ethylhexyl)phthalate CAS No. 117-81-7 EPA Chem Code: 295200	B2 (CRAVE)	Hepatocellular carcinomas & combined incidence of carcinomas & adenoma; Fischer 344 rats (F) and B6C3F1 mice (M & F). Neoplastic nodules & hepatocellular carcinomas; Fischer 344 rats (M).	1.4 E-2		B2	This assessment is located on IRIS. OPP has not reviewed this chemical. [Syn. DEHP, Bis(2-ethylhexyl)phthalate]
Dibromoethane, 1,2- CAS No. 106-93-4 EPA Chem Code: 042004	B2 (CRAVE)	Increased incidence of a variety of tumors in rats & mice by 3 routes of administration at both the site of application & at distant sites. EDB is mutagenic in various in vitro & in vivo assays.	8.5 E+1 (O) 2.2 E-4 (I)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical. [Syn. EDB, Ethylene dibromide]
Dibutyl phthalate CAS No. 84-74-2 EPA Chem Code: 028001	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans or animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Dicamba CAS No. 1918-00-9 EPA Chem Code: 029801	D				Pend.	The RFDC concluded that doses selected for the rat & mouse studies were not adequate.
Dichlobenil CAS No. 1194-65-6 EPA Chem Code: 027401	C	Adenomas alone (F); Hepatocellular adenomas & carcinomas, alone & combined (F & M); Fisher 344 rat				
Dichlorobenzamide, 2,6- CAS No. 2008-88-4 EPA Chem Code: 027402	Unclassifiable					RFDC concluded that the rat study contained numerous deficiencies and therefore a classification could not be given.
Dichlorobenzene, 1,2- CAS No. 95-50-1 EPA Chem Code: 059401	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans & inadequate animal data. This assessment is located on IRIS. OPP has not reviewed this chemical. [Syn. Orthodichlorobenzene]
Dichloroethane, 1,2- CAS No. 107-06-2 EPA Chem Code: 042003	B2 (CRAVE)	Induction of several tumor types in rats Osborne-Mendel rats & B6C3F1 mice treated by gavage and lung papillomas in ICR/HA Swiss mice after topical application.	9.1 E-2 (O) 2.6 E-5 (I)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical. [Syn. EDC]
Dichloroethylene, 1,1- CAS No. 75-35-4 EPA Chem Code: 600033	C (CRAVE)	Kidney adenomacarcinoma; Swiss mice (M)	6.0 E-1 (O) 5.0 E-5 (I)		C	This assessment is located on IRIS. OPP has not reviewed this chemical. [Syn. Vinylidene chloride]
Dichloromethane CAS No. 75-09-2 EPA Chem Code: 042004	B2 (CRAVE)	Hepatocellular neoplasms & alveolar/bronchiolar neoplasms; B6C3F1 mice (M & F). Benign mammary tumors (M & F), salivary gland sarcomas (M), leukemia (F); F344 rats.	7.5 E-3 (O) 4.7 E-7 (I)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Dichloropropene, 1,3- CAS No. 542-75-6 EPA Chem Code: 029001	B2	Forestomach, liver, mammary, thyroid, adrenal, urinary & lung tumors; Fischer 344 rats & B6C3F1 mice (M & F). Bronchioloalveolar adenomas; B6C3F1 mice (M).	5.33E-2 (I)		B2	[Syn. Telone II]
Dichlorvos (DDVP) CAS No. 62-73-7 EPA Chem Code: 084001	C(q) 2B (IARC)	Stomach tumors (forestomach, papilloma squamous, & squamous cell carcinoma); B6C3F1 mice; (F). Leukemia (of all sites & types); Fischer 344 rats (M).	1.22 E-1	C	B2	CRAVE Q* = 2.9 E-1 (O).
Diclofop-methyl (Hoelon) CAS No. 51338-27-3 EPA Chem Code: 110902	C(q)	Significantly increased (pairwise & trend) hepatocellular adenomas, carcinomas & combined tumors; HOE NMRkf (SPF 71) mice (M & F).	2.3 E-1			
Dicofol (Kelthane) CAS No. 115-32-2 EPA Chem Code: 010501	C 3 (IARC)	Liver tumors (adenomas/carcinomas); B6C3F1 mice (M)			Def.	
Dieldrin CAS No. 60-57-1 EPA Chem Code: 045001	B2 (CRAVE)	Effects range from benign liver tumors to hepatocarcinomas with transplantation confirmation, to pulmonary metastases; M & F mice (C3HeB/Fe, C3H, CF1, B6C3F1, C3H/HE & C57B1/6J)	1.6 E+1 (O) 4.6 E-3 (I)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
Diethyl phthalate CAS No. 84-66-2 EPA Chem Code: 128947	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans or animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Difenoconazole (Dividend) CAS No. 119446-68-3 EPA Chem Code: 128847	C	Statistically significant increases in liver adenomas, carcinomas & combined adenomas/carcinomas; CD-1 mice (M & F).				Tumors were observed at doses which were considered to be excessively high for carcinogenicity testing.
Difenzoquat methyl sulfate CAS No. 43222-48-6 EPA Chem Code: 106401	E					
Diiflubenzuron (Dimilin) CAS No. 35367-38-5 EPA Chem Code: 108201	E					p-Chloroaniline is a metabolite.
Dimethenamid (SAN 582H) CAS No. 87674-68-8 EPA Chem Code: 129051	C	Statistically significant increasing trend for benign combined &/or malignant liver tumors; Sprague-Dawley rat (M). Unresolved issues regarding nasal tumors, strong mutagenicity data & SAR.				HCPRC recommended a heritable translocation test, which is the next required test after a positive dominant lethal study (as per Mutagenicity Guidelines, Subdivision F, addendum 9).

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Dimethipin (Harvade) CAS No. 55290-64-7 EPA Chem Code: 118901	Tentative C	Lung adenomas & carcinomas; CD-1 mice (M)		C	C	Repeat of rat carcinogenicity study is requested.
Dimethoate CAS No. 60-51-5 EPA Chem Code: 035001	C	Hemolymphoreticular tumors; B6C3F1 mice (M). Spleen (hemangioma & hemangiosarcoma) skin (hemangiosarcoma), lymph (angioma & angiosarcoma) tumors; Wistar rats (M).		C		
Dimethyl ether CAS No. 75-27-5 EPA Chem Code: 18043Y CFR NO. 180.43Y	D	25.000 mg/kg/day 500.00 ppm				Assessment based inadequate animal data. In a rat study [CrI:CD(SD)BR] there was statistical elevation in total mammary tumors; however the HCPRC agreed that the evidence was not convincing.
Dimethyl phthalate CAS No. 131-11-3 EPA Chem Code: 028002	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans or animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Dinocap (Karathane) CAS No. 39300-45-3 EPA Chem Code: 036001	E					
Dinoseb CAS No. 88-85-7 EPA Chem Code: 037505	C	Liver adenomas; CD-1 mice (F).			D	Repeat of rat carcinogenicity study is requested.
Diquat dibromide CAS No. 85-00-7 EPA Chem Code: 032201	E				Pend.	
Disulfoton CAS No. 298-04-4 EPA Chem Code: 032501	E					
Dithiopyr (MON 7200) CAS No. 97886-45-8 EPA Chem Code: 128994	E					
Diuron CAS No. 330-54-1 EPA Chem Code: 035505	Pending					Referred to HCPRC by RFDC.
Ebufos (Cadusafos/Apache) CAS No. 95465-99-9 EPA Chem Code: 128864	E					
Endosulfan CAS No. 115-29-7 EPA Chem Code: 079401	E				Def.	

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Endrin CAS No. 72-20-8 EPA Chem Code: 041601	D (CRAVE)	An NCI bioassay was suggestive of response in Osborne-Mendel rats (M & F).			D	This assessment is located on IRIS. OPP has not reviewed this chemical.
Epichlorohydrin CAS No. 106-89-8 EPA Chem Code: 097201	B2 (CRAVE)	Multiple studies in rats & mice administered epichlorohydrin by various routes were positive. As epichlorohydrin is a strong alkylating agent, tumors are produced at the site of application.	9.9 E-3 (O) 1.2 E-6 (I)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
Esfenvalerate (Asna) CAS No. 66230-04-4 EPA Chem Code: 109303	E					Data from Fenvalerate (CAS No. 51630-58-1) was used in this assessment.
Ethalfuralin (Sonalan) CAS No. 55283-68-6 EPA Chem Code: 113101	C(q)	Mammary tumors (F); Suggestion of bladder tumors (F) and kidney tumors (M & F); Fischer 344 rats	8.9 E-2			HCPRC considered the dose levels in the mouse study to be inadequate; however HCPRC did not recommend repeating the study.
Ethephon CAS No. 16672-87-0 EPA Chem Code: 099801	D					The RFDC considered that the evidence from the 2 rat studies & 1 of the mouse studies to be inadequate to support a positive carcinogenicity finding, while the evidence from the other mouse study was equivocal.
Ethion CAS No. 563-12-2 EPA Chem Code: 058401	E					
Ethiozin (Ebuzin/Tycor) CAS No. 64529-56-2 EPA Chem Code: 128883	Tentative C	Thyroid follicular cell tumors; F344 rats (M & F)				Quantification deferred pending submission & evaluation of additional data.
Ethofenprox (Etofenprox) CAS No. 80844-07-1 EPA Chem Code: 128965	C(q)	Combined thyroid follicular cell adenomas/carcinomas; Sprague-Dawley rats (M & F).	5.1 E-3			
Ethofumesate CAS No. 26225-79-6 EPA Chem Code: 110601	D					Assessment based on the fact that the carcinogenicity phase of the rat study & the hamster study were both considered to be inadequate.
Ethoprop (Ethoprophos) CAS No. 13194-48-4 EPA Chem Code: 041101						Referred to HCPRC by RFDC.
Ethylene CAS No. 74-85-1 EPA Chem Code: 041901	3 (IARC)					

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Ethylene diamine CAS No. 107-15-3 EPA Chem Code: 004205	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans or animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Ethylene dibromide (EDB) CAS No. 106-93-4 EPA Chem Code: 042002	B2 (CAG) 2A (IARC)	Forestomach (squamous cell carcinomas) (M & F) Osborne-Mendel rats & B6C3F1 mice. Alveolar/bronchiolar adenomas (M&F) mice. Hemangiosarcomas (circulatory system) & hepatocellular carcinomas (M) rats.	67 (0) 1.4 (1)			
Ethylene oxide CAS No. 75-21-8 EPA Chem Code: 042301	1 (IARC)					
Ethylene thiourea (ETU) CAS No. 96-45-7 EPA Chem Code: 600016	B2	Thyroid adenoma, carcinoma, & combined adenoma/carcinoma; F344 & CRCD rats (M&F). Thyroid adenomas & carcinoma, pituitary & liver tumors; B6C3F1 & C57BL/6 x AKR mice (M & F).	6.0 E-2	B2	Pend.	
Fenamiphos (Nemacur) CAS No. 22224-92-6 EPA Chem Code: 100601	E					
Fenarimol CAS No. 60168-88-9 EPA Chem Code: 206600	E					
Fenbuconazole (Fenethanil) CAS No. 114369-43-6 EPA Chem Code: 129011	C(q)	Thyroid follicular cell adenomas &/or combined adenomas/carcinomas; Sprague-Dawley rats (M). Hepatocellular carcinomas (M); Hepatocellular adenomas & combined adenomas &/or carcinomas (F); CD-1 mice	1.06 E-2			
Fenbutatin oxide (Vendex) CAS No. 13356-08-6 EPA Chem Code: 104601	E					
Fenitrothion (Sumithion) CAS No. 122-14-5 EPA Chem Code: 105901	E					
Fenoxycarb CAS No. 72490-01-8 EPA Chem Code: 125301	B2	Lung adenomas, carcinomas & combined adenoma/carcinoma; Harderian gland adenomas; CD-1 mice (M).				HCPRC recommended a low dose extrapolation model be applied to the animal data for the quantification of human risk.
Fenpropathrin (Danitol) CAS No. 39515-41-8 EPA Chem Code: 127901	E					

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Fenpyroximate CAS No. 134098-61-6 EPA Chem Code: 129131	Not Likely					
Fenthion CAS No. 55-38-9 EPA Chem Code: 053301	E					
Fenvalerate (Pydrin) CAS No. 51630-58-1 EPA Chem Code: 109301	E					All food uses for Fenvalerate have or will be transferred to Esfenvalerate (CAS No. 66230-44-4). Fenvalerate data will be used in the Esfenvalerate assessment.
Fipronil CAS No. 120068-37-3 EPA Chem Code: 129121	C	Thyroid follicular cell adenomas, carcinomas & combined adenomas/carcinomas (M); thyroid follicular cell adenomas & combined adenomas/carcinomas (F); Charles River CD rats				
Fludioxonil (Maxim) CAS No. 13141-86-1 EPA Chem Code: 071503	D	Based on increased liver tumors in rats (F) that was statistically significant for combined adenoma/carcinoma only, lack of response in M rats or either sex of the mouse & need for additional muta studies.				
Flumetsulam (XRD-498) CAS No. 98967-40-9 EPA Chem Code: 129016	E					
Flumiclorac pentyl CAS No. 87546-18-7 EPA Chem Code: 128724	E					
Fluometuron CAS No. 2164-17-2 EPA Chem Code: 035503	C	Statistically significant increases in combined adenomas/carcinomas of the lung (M), Malignant lymphocytic lymphomas (F); CD-1 mice.				HCPR recommended for the purpose of risk characterization, both a low dose extrapolation model (Q1*) applied to animal data and the RfD approach should be used.
Fluridone CAS No. 59756-60-4 EPA Chem Code: 112900	E					
Flusilazole (Nustar) CAS No. 85509-19-9 EPA Chem Code: 128835	Deferred					HCPRC recommends new carcinogenicity studies in M & F in both the rat and mouse.
Flutolanil (Moncut) CAS No. 66332-96-5 EPA Chem Code: 128975	E					

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Folpet CAS No. 133-07-3 EPA Chem Code: 081601	B2	Duodenum (carcinoma & adenoma); CD-1 & B6C3F1 mice (M & F); Hyperkeratosis/acanthosis; B6C3F1 mice (M).	3.49 E-3		B2	Additional information for the rat studies has been requested.
Fomesafen (Flex) CAS No. 72128-02-0 EPA Chem Code: 123802	C(q)	Liver tumors (adenomas, carcinomas, & adenomas/carcinomas combined); CD-1 mice (M & F).	1.9 E-1		C	
Fonofos (Dyfonate) CAS No. 944-22-9 EPA Chem Code: 041701	E					
Formaldehyde CAS No. 50-00-0 EPA Chem Code: 043001	B1 (CRAVE)	Statistically significant associations between site-specific respiratory neoplasms & exposure to formaldehyde; Humans. Nasal squamous cell carcinomas; Sprague-Dawley & Fischer 344 rats & B6C3F1 mice	1.3 E-5 (1)		B1	This assessment is located on IRIS. OPP has not reviewed this chemical.
Formetanate hydrochloride CAS No. 23422-53-9 EPA Chem Code: 097301	E					
Fosetyl-Al (Aliette) CAS No. 39148-24-8 EPA Chem Code: 123301	Unclassified	HCPRC concluded that Fosetyl-Al was not amenable to classification using current Agency cancer guidelines. Therefore, the pesticidal use of Fosetyl-Al is unlikely to pose a carcinogenic hazard to humans.			C	
Furmecycloz (Xyligen B) CAS No. 60568-05-0 EPA Chem Code: 122601	B2	Liver tumors (M & F); Urothelial tumors (M); Sprague-Dawley rats	2.98 E-2		B2	CRAVE Q* = 3.0 E-2 (0).
Glyphosate CAS No. 1071-83-6 EPA Chem Code: 417300	E			D	D	
Glyphosate trimesium CAS No. 81591-81-3 EPA Chem Code: 128501	E					[Syn. Sulfosate]
Halosulfuron-methyl CAS No. 100784-20-1 EPA Chem Code: 128721	E					
Haloxypop-methyl (Verdict) CAS No. 690806-40-2 EPA Chem Code: 125201	B2	Liver tumors [adenomas (M), carcinomas (F) & adenomas/carcinomas (M & F)]; B6C3F1 mice.	7.39 E-0	Int. C	Pend.	Assessment also based upon the acknowledgment by the registrant that the compound would be likely to cause tumors of the liver in rats if tested at adequate dosage levels.

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Heptachlor CAS No. 76-44-8 EPA Chem Code: 044801	B2 (CRAVE)	Benign and malignant liver tumors (M & F) in mice (C3H & B6C3F1)	4.5 E+0 (0) 1.3 E-3 (1)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
Heptachlor epoxide CAS No. 1024-57-3 EPA Chem Code: 044801	B2 (CRAVE)	Liver carcinomas; C3H & CD-1 mice (M & F); CFN rats (F).	9.1 E+0 (0) 2.6 E-3 (1)			
Hexachlorobenzene (HCB) CAS No. 118-74-1 EPA Chem Code: 061001	B2 (CRAVE) 2B (IARC)	Tumors in the liver, thyroid & kidney in rats (Sprague-Dawley, Agus & Wistar), mice (Swiss & ICR) and hamsters (Syrian Golden)	1.6 E+0 (0) 4.6 E-4 (1)		B2	Hexachlorobenzene is a contaminate of PCNB & Dacthal. OPP has revised (06/21/95) the oral Q* for HCB: 1.02 E+0.
Hexachlorocyclohexane CAS No. 608-73-1 EPA Chem Code: 008901	B2 (CRAVE)	Benign hepatic nodules & hepatocellular carcinomas; Swiss mice (M). Liver nodules hepatomas; dd mice (M & F). Hepatomas; ICR-JCL mice (M & F).	1.8 E+0 (0) 5.1 E-4 (1)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical. [Syn. t-HCH]
Hexachlorocyclopentadiene CAS No. 77-47-4 EPA Chem Code: 027502	D (CRAVE)				D	Assessment based on inadequate data in humans & no data in animals concerning carcinogenicity. This assessment is located on IRIS. OPP has not reviewed this chemical.
Hexachloroethane CAS No. 67-72-1 EPA Chem Code: 045201	C (CRAVE)	Hepatocellular carcinoma; B6C3F1 mice (M & F).	1.4 E-2 (0) 4.0 E-6 (1)			This assessment is located on IRIS. OPP has not reviewed this chemical.
Hexaconazole (Anvil) CAS No. 79983-71-4 EPA Chem Code: 128925	C(q)	Benign Leydig cell tumors; Wistar (Alpk: APfSD) rat (M)	2.3 E-2			Chemical was not adequately tested for carcinogenic potential in mice. Repeat of study not required at this time.
Hexazinone CAS No. 51235-04-2 EPA Chem Code: 107201	D	Statistically significant increasing trend in combined hepatocellular adenoma/carcinoma; CD-1 mice (F)				Assessment based on evidence that was equivocal (not entirely negative, but yet not convincing) since only statistically significant increase was in F mice (by trend test, but not by pairwise comparison with controls).
Hexythiazox (Savey) CAS No. 78587-05-0 EPA Chem Code: 128849	C(q)	Liver (hepatocellular carcinomas & carcinomas/adenomas combined); B6C3F1 mice (F).	3.9 E-2	C	Pend.	
Hydramethylnon (Amdro) CAS No. 67485-29-4 EPA Chem Code: 118401	C	Lung adenomas & combined adenomas/carcinomas; CD-1 mice (F).				
Hydrogen cyanamide CAS No. 420-04-2 EPA Chem Code: 014002	C(q)	Ovarian granulosa-theca tumors; CRL:CD-1 (ICR)BR mice (F) [Hydrogen cyanamide]. Positive trend in hemangiosarcomas; B6C3F1 mice (M) [Calcium cyanamide].	6.74 E-2			Calcium cyanamide is rapidly & quantitatively converted to Hydrogen cyanamide in solution & at the pH of the human & rat gut. Thus, Calcium cyanamide studies were used as supporting data for Hydrogen cyanamide.

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Hydroprene (Altozar) CAS No. 41096-46-2 EPA Chem Code: 486300	D					Assessment based on equivocal nature of the findings in the rat study and the lack of a carcinogenicity study in a second species.
Hydroquinone CAS No. 123-31-9 EPA Chem Code:	Not classified		5.6 E-2			Hydroquinone is a plant metabolite of Asulam
Imazalil CAS No. 35554-44-0 EPA Chem Code: 111901	C(q)	Hepatocellular adenomas & combined adenomas/carcinomas w/positive trends for adenomas, carcinomas & combined adenomas/carcinomas (M); Liver tumors (adenomas & combined adenomas/carcinomas) (F); Swiss mice	6.2 E-2			HCPRC concluded that another rat study conducted at adequately high doses, an in vivo UDS study and an S-Phase cell proliferation assay.
Imazapyr (Arsenal) CAS No. 81334-34-1 EPA Chem Code: 128821	E					
Imazethabenz (Assert) CAS No. 81405-85-8 EPA Chem Code: 128843	D	Vascular; Positive trend for hemangiosarcomas in CD-1 mice (M).		E	Def.	
Imidacloprid CAS No. 105827-78-9 EPA Chem Code: 129099	E					
Iprodione (Glycophene) CAS No. 36734-19-7 EPA Chem Code: 109801	B2	Liver adenomas, carcinomas & combined adenomas &/or carcinomas (M & F); Ovarian luteomas (F); Crl:CD-1 mice. Testicular interstitial cell benign tumors; Crl:CD(SD)BR rats (M).	4.39 E-2			
Isophorone CAS No. 78-59-1 EPA Chem Code: 047401	C (CRAVE)	Preputial gland carcinomas; F344/N rats (M).	9.5 E-4		C	This assessment is located on IRIS. OPP has not reviewed this chemical.
Isoxaben (EL-107) CAS No. 82558-50-7 EPA Chem Code: 125851	C	Hepatocellular adenomas; B6C3F1 mice (M&F)		D	Pend.	
Kathon 886 (Kathon Biocide) CAS No. 55965-84-9 EPA Chem Code: 107106	D					Assessment based on the lack of second carcinogenicity study in a another species.
Lactofen (Cobra) CAS No. 77501-63-4 EPA Chem Code: 128888	B2	Hepatocellular carcinomas (M); Hepatocellular adenomas & carcinomas (M & F); CD-1 mice. Liver neoplastic nodules; Sprague-Dawely rats (M & F).	1.7 E-1			

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Lindane CAS No. 58-89-9 EPA Chem Code: 009001	B2/C (CAG)	Liver and lung tumors (both genig); mice				A Lindane metabolite, 2,4,6-trichlorophenol (TCP) is classified as B2.
Linuron CAS No. 330-55-2 EPA Chem Code: 035506	C	Testicular tumors; CD rats (M); Hepatocellular adenomas; CD-1 mice (M & F).		C	C	
MBC CAS No. EPA Chem Code:	C(q)	Liver tumors (hepatocellular adenomas & carcinomas) in 2 genetically related strains of mice (CD-1 & Swiss SPF) (M & F)	4.2 E-3	C		Benomyl rapidly hydrolyses to MBC in an aqueous environment. MBC also appears to be the initial metabolite in mammalian systems. MBC has similar or increased toxicity, both acute & chronic, to Benomyl.
MGK Repellent 326 CAS No. 136-45-8 EPA Chem Code: 047201	B2	Multiple malignant & benign tumors [liver (M & F), kidney (M & F), testes (M) & uterine (F); CD rats. Multiple malignant tumors [liver (M & F) & lung/bronchiolar (M)]; CD-1 mice.	2.4 E-3 (M) 1.2 E-3 (F)			
MGK-264 CAS No. 113-48-4 EPA Chem Code: 057001	C	Statistically significant increases in hepatocellular adenomas; CD-1 mice (M & F) Statistically significant increases for thyroid follicular cell adenomas; Crl:CDBR rats (M).				
MON 21200 (Genesis) CAS No. 82697-71-0 EPA Chem Code: 128726	C	Statistically significant increase in histiocytic sarcomas (F); CD-1 mice				HCPRC recommended for the purpose of risk characterization, the RfD approach should be used for quantitation of human risk.
Malathion CAS No. 121-75-5 EPA Chem Code: 057701	D 3 (IARC)	Thyroid C-Cell adenoma; F344 rat (M & F).				Additional carcinogenicity studies for malathion & malaoxon were requested.
Maleic hydrazide CAS No. 5716-15-4 EPA Chem Code: 051502	E					
Mancozeb CAS No. 8018-01-7 EPA Chem Code: 014504	B2	Thyroid follicular cell adenomas & carcinomas, combined thyroid follicular cell adenomas &/or carcinomas; Crl:CD(BR) rats (M & F).	USE ETU Q*			
Maneb CAS No. 12427-38-2 EPA Chem Code: 014505	B2	Thyroid follicular cell adenomas & carcinomas, combined thyroid follicular cell adenomas &/or carcinomas; Crl:CD(BR) rats (M & F).	USE ETU Q*			
Melamine CAS No. 108-78-1 EPA Chem Code:	N/A	Transitional cell carcinomas of the urinary bladder; F344/N rats (M).				HCPRC concluded that Melamine was not amenable to classification using the current Agency guidelines & that it is unlikely that Melamine exposure would pose a carcinogenic hazard to humans from the usage of Cyromazine

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRABE CLASS	COMMENTS
Mepiquat chloride CAS No. 24307-26-4 EPA Chem Code: 109101	E					
Mercaptobenzothiazole, 2- CAS No. 149-30-4 EPA Chem Code: 051701	C	Adrenal gland tumors (M & F), some evidence of preputial gland tumors (M) & equivocal evidence for pituitary gland tumors (M); F344/N rats.				Syn. MBT
Mercury (Inorganic) CAS No. 7439-97-6 EPA Chem Code: 052301	D (CRABE)				D	Assessment based on lack of data concerning carcinogenicity in humans & inadequate animal data. This assessment is located on IRIS. OPP has not reviewed this chemical.
Metalaxyl CAS No. 57837-19-1 EPA Chem Code: 113501	E					Chemical will be re-evaluated when genotoxicity studies are reviewed.
Metam sodium CAS No. 137-42-8 EPA Chem Code: 039003	B2	Malignant angiosarcomas (by both pair-wise & trend analysis); C57BL/10JfCD-1/Alpk mice (M & F). Malignant hemangiosarcomas; Hsd/Ola: Wistar rats (M).	1.98 E-1			
Methamidophos (Monitor) CAS No. 10265-92-6 EPA Chem Code: 101201	E					
Methane arsonic acid (MAA) CAS No. 124-58-3 EPA Chem Code: 128876			1.38 E-1			Data not reviewed by OPP.
Methidathion CAS No. 950-37-8 EPA Chem Code: 100301	C	Liver tumors (benign and malignant); CD-1 mice (M).		C	C	
Methiocarb (Mesurol) CAS No. 2032-65-7 EPA Chem Code: 100501	D					Assessment based on the lack of a second carcinogenicity study in another species.
Methomyl CAS No. 16752-77-5 EPA Chem Code: 090301	Not Likely					
Methoxychlor CAS No. 72-43-5 EPA Chem Code: 034001	D (CRABE) 3 (IARC)				D	Assessment based on lack of data concerning carcinogenicity in humans & inconclusive data in animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Methyl bromide CAS No. 74-83-9 EPA Chem Code: 053201	D (CRABE)				D	Assessment based on lack of data concerning carcinogenicity in humans & inadequate animal data. This assessment is located on IRIS. OPP has not reviewed this chemical. [Syn. Bromomethane]

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Methyl ethyl ketone (MEK) CAS No. 78-93-3 EPA Chem Code: 044103	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans or animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Methylene bis(thiocyanate) CAS No. 6317-18-6 EPA Chem Code: 068102	D	Benign adrenal pheochromocytomas in M & pituitary adenomas in F; Sprague-Dawley rats. Alveolar/bronchial adenomas & carcinomas; CD-1 mice (M&F). [All lesions were within historical control range].				RFDC based classification on inadequacy of the data set and on what was considered to be a border line significance of the tumors observed in rats and mice.
Methylphenol, 3- CAS No. 108-39-4 EPA Chem Code: 022102	C (CRAVE)	Increased incidence of skin papillomas in mice in an initiation-promotion study.			C	This assessment is located on IRIS. OPP has not reviewed this chemical. [Syn. meta-Cresol]
Metolachlor CAS No. 51218-45-2 EPA Chem Code: 108801	C	Liver adenomas and combined adenomas/carcinomas; Charles River CD(SD)BR rats (F). [Same liver neoplasia in female rats was also observed in a separate repeat study]		C	C	HCPRC recommended that a Margin of Exposure (MOE) methodology be used for the estimation of human risk.
Metribuzin (Sencor) CAS No. 21087-64-9 EPA Chem Code: 101101	D	Pituitary adenomas; SPF Wistar rats (F)			D	Notes: 1993 rat study in Fischer CDF(F-344)/BR rats was negative. Chemical structurally related to Ethiozin, which was associated w/thyroid cell adenomas & combined adenomas/carcinomas in Fischer 344 rats (M & F).
Mirex CAS No. 2385-85-5 EPA Chem Code: 039201	2B (IARC)					
Molinate (Ordram) CAS No. 2212-67-1 EPA Chem Code: 041402	C(q)	Statistically significant increase in combined adenomas & carcinomas in the kidney; Crl:CD(SD)BR rat (M).	1.1 E-1			
Myclobutanil (Systane/Rally) CAS No. 88671-89-0 EPA Chem Code: 128857	E					
Naled (Dibrom) CAS No. 300-76-5 EPA Chem Code: 034401	E					
Naptalam (Alanap-1) CAS No. 132-66-1 EPA Chem Code: 030702	D					Assessment based on the lack of an adequate mouse carcinogenicity study. Naptalam is currently registered as a low volume/minor use chemical. If exposure or use pattern changes, a new mouse study maybe required.

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRABE CLASS	COMMENTS
Naptalam, sodium salt CAS No. 132-67-2 EPA Chem Code: 030703	D					Assessment based on the lack of an adequate mouse carcinogenicity study. Naptalam is currently registered as a low volume/minor use chemical. If exposure or use pattern changes, a new mouse study maybe required.
Nicosulfuron (Accent) CAS No. 111991-09-4 EPA Chem Code: 129008	E					
Nitrapyrin CAS No. 1929-82-4 EPA Chem Code: 069203	D	Renal tubular adenomas & adenocarcinomas; Fischer 344 rats (M).				HCPRC recommended a new mouse carcinogenicity study be conducted.
Nitrobenzene CAS No. 98-95-3 EPA Chem Code: 056501	D (CRABE)				D	Assessment based on lack of data concerning carcinogenicity in humans or animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Nitrofen (TOK) CAS No. 1836-75-5 EPA Chem Code: 038201	2B (IARC)					
Norflurazon CAS No. 27314-13-2 EPA Chem Code: 105801	C	Liver adenomas & combined liver adenomas & carcinomas; CD-1 mice (M).				
Orthophenylphenol & Na salt CAS No. 90-43-7 EPA Chem Code: 064103	B2 2B (IARC)	Multiple tumor types in multiple studies. Malignant urinary bladder & kidney tumors (M); Papillomas of the urinary bladder & uterine endometrium (F); F344/DuCrj & F344 rats				
Oryzalin CAS No. 19044-88-3 EPA Chem Code: 104201	C(q)	Multiple sites (thyroid, mammary); F344 rats (M & F).	1.3 E-1	C	C	
Oxadiazon CAS No. 19666-30-9 EPA Chem Code: 109001	C(q)	Liver tumors (malignant, combined malignant & benign); CR CD-1 mice (M & F).	1.4 E-1	C	Def.	
Oxadixyl (San 371F) CAS No. 7732-09-3 EPA Chem Code: 126701	C(q)	Hepatocellular adenomas (by pair-wise comparison & with a dose-related trend); Han-Wistar rats (M & F).	5.3 E-2	C	Def.	
Oxamyl (Vydate) CAS No. 23135-22-0 EPA Chem Code: 103801	Not Likely					

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRABE CLASS	COMMENTS
Oxyfluorfen (Goal) CAS No. 42874-03-3 EPA Chem Code: 111601	C(q)	Liver (adenomas, carcinomas & combined adenomas &/or carcinomas); CD-1 mice (M).	1.28 E-1			
Oxytetracycline CAS No. 2058-46-0 EPA Chem Code: 006308	D					
Oxythioquinox (Morestan) CAS No. 2439-01-2 EPA Chem Code: 054101	B2	Lung tumors; NMRI mice (M). Hepatocellular tumors (M & F) & rare kidney tumors (F); F344 rats. Data showing chemical has clastogenic activity provided additional support.				HCPRC recommended for the purpose of risk characterization, a low dose extrapolation model be applied to animal data for the quantification of human risk, based on total kidney tumors (combined adenoma/carcinoma).
Paclobutrazol CAS No. 76738-62-0 EPA Chem Code: 125601	D	Benign stromal polyps (F); Leydig cell tumors (M); Sprague-Dawley Crl:CD(SD)BR rats.				The RFDC noted that new carcinogenicity studies may be required if the current use pattern changes (i.e. food uses or uses which are in the high exposure category & require carcinogenicity data).
Paradichlorobenzene CAS No. 106-46-7 EPA Chem Code: 061501	C	Liver (adenomas and carcinomas); B6C3F1 mice (M & F).		C		
Paranitrophenol CAS No. 100-02-7 EPA Chem Code: 056301	D					Classification based on inadequacy of the data base, i.e. lack of carcinogenicity data in a second animal species.
Paraquat dichloride CAS No. 1910-42-5 EPA Chem Code: 061601	E			D	C	OPP to reevaluate when new data on powdered diet are submitted. SAP concerned with nasal squamous cell carcinoma seen in Fischer 344 rats (M).
Parathion (Ethyl parathion) CAS No. 56-38-2 EPA Chem Code: 057501	C 3 (IARC)	Adrenal cortical tumors (adenomas + carcinomas); Thyroid follicular cell adenomas & pancreatic cell carcinomas; Osborne-Mendel rat (M); Benign pancreatic tumors; Wistar rat (M)			C	Mouse carcinogenicity study should be repeated but not using B6C3F1 strain of mice.
Pendimethalin CAS No. 40487-42-1 EPA Chem Code: 108501	C	Thyroid follicular cell adenomas; Sprague-Dawley rats (M & F)				
Pentachloronitrobenzene CAS No. 82-68-8 EPA Chem Code: 056502	C	Thyroid follicular cell adenomas (by both pair-wise & trend analysis) in males with a positive trend in females; CD rats.				
Pentachlorophenol CAS No. 87-86-5 EPA Chem Code: 063001	B2 3 (IARC)	Hepatocellular adenomas & carcinomas, adrenal medulla pheochromocytomas & malignant pheochromocytomas, &/or hemangiosarcomas & hemangiomas in one or both sexes of B6C3F1 mice.	1.29 E-1	B2	B2	CRABE Q* = 1.2 E-1 (O).

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Permethrin CAS No. 52645-53-1 EPA Chem Code: 109701	C(q) 3 (IARC)	Lung (adenomas & combined adenomas/carcinoma); Liver (adenoma); CD-1 mice (F).	1.84 E-2	C	Pend.	
Phenmedipham (Betanal) CAS No. 13684-63-4 EPA Chem Code: 098701	D					RFDC considered the dose levels in both carcinogenicity studies (rat & mouse) to be inadequate.
Phenol CAS No. 108-95-2 EPA Chem Code: 064001	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans & inadequate animal data. This assessment is located on IRIS. OPP has not reviewed this chemical.
Phorate (Thimet) CAS No. 298-02-2 EPA Chem Code: 057201	E					OPP requests a 90-day study in mice to determine whether the doses in the mouse carcinogenicity study would inhibit ChE in plasma, RBC or brain or cause other toxic effects.
Phosmet (Imidan) CAS No. 732-11-6 EPA Chem Code: 059201	Tentative C	Liver tumors (adenomas & adenomas + carcinomas combined) (M); Trend for liver liver adenoma & carcinoma (F); B6C3F1 mice				
Phosphamidon CAS No. 13171-21-6 EPA Chem Code: 018201	C	Bladder transitional cell carcinoma; Hepatocellular carcinoma; Sprague-Dawley rats (M)				
Phosphine CAS No. 7803-51-2 EPA Chem Code: 066500	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans & inadequate data in animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Phostebupirim (Bay mat 7484) CAS No. 96182-53-5 EPA Chem Code: 129806	E					
Picloram (+ salts) CAS No. 1918-02-1 EPA Chem Code: 005101	E					
Piperonyl butoxide CAS No. 51-03-6 EPA Chem Code: 067501	C	Increased incidence of hepatocellular tumors (M & F) (adenomas, carcinomas combined adenomas/carcinomas in males & adenomas in females); CD-1 mice				
Polychlorinated biphenyls CAS No. 1336-36-3 EPA Chem Code: 017801	B2 (CRAVE)	Hepatocellular carcinomas; Fischer 344, Sprague-Dawley & Wistar rats; dd & BALB/cJ mice. Inadequate yet suggestive evidence of excess risk of liver cancer in humans by ingestion, inhalation or dermal contact	7.7 E+0		B2	This assessment is located on IRIS. OPP has not reviewed by OPP.

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Prallethrin (ETOC) CAS No. 23031-36-91 EPA Chem Code: 128772	E					
Primisulfuron-methyl CAS No. 86209-51-0 EPA Chem Code: 128973	D	Hepatocellular adenomas & carcinomas; CD-1 mice (M & F) [The 2 dose levels were these tumors occurred were excessively toxic].		D		Syn. Beacon. HCPRC did not recommend to repeat the mouse study.
Prochloraz CAS No. 67747-09-5 EPA Chem Code: 128851	C(q)	Hepatocellular adenoma & carcinoma, combined adenoma/carcinoma; CD-1 mice (F)	1.5 E-1	C	C	
Procymidone (Sumilex) CAS No. 32809-16-8 EPA Chem Code: 129044	B2	Interstitial cell adenoma (M); Pituitary adenoma (F); Osborne-Mendel rats. Liver adenomas & combined adenomas/carcinomas; B6C3F1 mice (F)	2.35 E-2 1.92 E-2	C		Q* Potency - 2.35 E-2 female mice; 1.92 E-2 male rats.
Prodiamine (Rydex) CAS No. 29091-21-2 EPA Chem Code: 110201	C	Thyroid follicular cell neoplasia; Pancreatic adenomas; Sprague-Dawley rats (M & F). Fibrosarcomas; CD-1 mice (M)		C		
Profenofos (Curacron) CAS No. 41198-08-7 EPA Chem Code: 111401	E					
Prometon CAS No. 1610-18-0 EPA Chem Code: 080804	D	Mammary tumor; Sprague-Dawley rats (F)				
Prometryn CAS No. 7287-19-6 EPA Chem Code: 080805	E					
Pronamide (Kerb) CAS No. 23950-58-5 EPA Chem Code: 101701	B2	Hepatocellular adenomas/carcinomas; B6C3F1 & C57Bl6xC3H/Anf mice (M)	1.54 E-2	C		
Propamocarb hydrochloride CAS No. 25606-41-1 EPA Chem Code: 119302	D					RFDC considered the carcinogenicity phase of the rat study to be unacceptable. The mouse carcinogenicity study was also considered unacceptable.
Propargite (Omite) CAS No. 2312-35-8 EPA Chem Code: 097601	B2	Statistically significant increases in undifferentiated sarcomas in the jejunum; Crl:CDBR rat (M & F).	1.71 E-2			HCPRC determined the mouse carcinogenicity study to be inadequate. However a new study is not required.
Propazine CAS No. 139-40-2 EPA Chem Code: 080808	C	Mammary tumors (benign & malignant); Sprague-Dawley rats (F)		C		The registration of Propazine has been withdrawn by the manufacturer.

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRABE CLASS	COMMENTS
Propiconazole (Banner/Tilt) CAS No. 60207-90-1 EPA Chem Code: 122101	C	Hepatocellular adenomas, carcinomas, & adenomas/carcinomas combined; CD-1 mice (M)		D	Pend.	
Propylene oxide CAS No. 75-56-9 EPA Chem Code: 042501	B2 (CRABE)	Benign & malignant tumors at the site of exposure when exposed by subcutaneous injections (NMRI mice), by inhalation (F344/N, C57BL/6J Wistar rats & B6C3F1 mice) & by gavage (Sprague-Dawley rats).	2.4 E-1 (0) 3.7 E-6 (1)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
Prosulfuron (CGA-152005) CAS No. 94125-34-5 EPA Chem Code: 129031	D	Mammary gland adenomas & adenocarcinomas (F); Interstitial cell tumors (M); Crl:CD(SD)BR rats				
Pyrethrins CAS No. 121-21-1 EPA Chem Code: 069001	Deferred					Classification will be reconsidered pending HCPRC review of the laboratory pathology peer review.
Pyridaben CAS No. 96489-71-3 EPA Chem Code: 129105	E					
Pyrimethanil CAS No. 53112-28-0 EPA Chem Code: 288201						Referred to HCPRC by RFDC.
Pyriithiobac-sodium CAS No. 123343-16-8 EPA Chem Code: 078905	C	Liver adenomas, carcinomas & combined adenoma/carcinoma; CD-1 mice (M). Rare kidney tubular adenomas, carcinomas & combined adenoma/carcinoma; Crl:CDBR rats (M).	1.05 E-3 1.25 E-2			1st Potency Q* value is based upon male rat kidney tubular (adenomas and/or adenocarcinomas) tumors. 2nd value based on male mouse liver (adenomas and/or carcinomas) tumors.
Quinclorac (Facet) CAS No. 84087-01-4 EPA Chem Code: 128974	D	Equivocal increase in pancreatic acinar cell adenomas; Wistar rats (M).		D		
Quizalofop ethyl (Assure) CAS No. 76578-14-8 EPA Chem Code: 128201	D	Liver (adenomas & carcinomas combined); CD-1 mice (M).		E	D	HCPRC concluded that limitations in the data from the mouse study precluded an accurate interpretation of carcinogenic risk. No new animals studies are required.
Resmethrin CAS No. 10453-86-8 EPA Chem Code: 097801						Referred to HCPRC by RFDC.
Rimsulfuron (DPX-E9636) CAS No. 122931-48-0 EPA Chem Code: 129009	E					

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Rotenone CAS No. 83-79-4 EPA Chem Code: 071003	E			E	Def.	
Selenium and compounds CAS No. 7782-49-2 EPA Chem Code: 072001	D (CRAVE)				D	Assessment based on inadequate human data & inadequate evidence of carcinogenicity in animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Silver CAS No. 7440-22-4 EPA Chem Code: 072501	D (CRAVE)	In animals, local sarcomas have been induced after implantation of foils & discs of silver. Interpretation of these findings has been questioned due to the phenomenon of solid-state carcinogenesis.			D	This assessment is located on IRIS. OPP has not reviewed this chemical.
Silvex (2,4,5-TP) CAS No. 93-72-1 EPA Chem Code: 082501	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans & inadequate animal data. This assessment is located on IRIS. OPP has not reviewed this chemical. [Syn. Trichlorophenoxypropionic acid, 2,4,5-]
Simazine CAS No. 122-34-9 EPA Chem Code: 080807	C(q) 3 (IARC)	Pituitary gland carcinomas; Mammary gland carcinomas; Sprague-Dawley rats (F)	1.2 E-1	C	Pend.	
Sodium omadine CAS No. 15922-78-8 EPA Chem Code: 088004	D					RFDC considered the mouse study to be inadequate.
Sulfallate CAS No. 95-06-7 EPA Chem Code: 039001	2B (IARC)	Mammary gland tumors (F); Lung tumors (M); B6C3F1 mice. Mammary gland tumors (F); Malignant tumors of the forestomach (M); Osborne-Mendel rats				
Sulfentrazone CAS No. 122836-35-5 EPA Chem Code: 129081	E					
Sulprofos (Merafos/Bolstar) CAS No. 35400-43-2 EPA Chem Code: 111501	E					
Sumilarv (Pyriproxyfen) CAS No. 95737-68-1 EPA Chem Code: 129032	E					
TCMTB (Busan 72) CAS No. 21564-17-0 EPA Chem Code: 035603	C	Testicular interstitial cell adenomas (M); Thyroid c-cell adenomas (F); Sprague-Dawley rats				HCPRC recommended that for the purpose of risk characterization, the RfD approach should be used for quantitation of human risk

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Tebuconazole (Folicur) CAS No. 107534-96-3 EPA Chem Code: 128997	C	Statistically significant increase in the incidence of hepatocellular adenomas, carcinomas & combined adenomas/carcinomas both by positive trend & pairwise comparison; NMRI mice (M & F).				
Tebufenozide CAS No. 5902-51-2 EPA Chem Code: 129026	E					
Tebuthiuron CAS No. 34014-18-1 EPA Chem Code: 105501	D					RFDC considered the 2 mouse studies to be of supplementary nature. Dose levels were inadequate for carcinogenicity testing; however tumor profile was not altered. A new study is not considered necessary at this time.
Teflubenzuron CAS No. 83121-18-0 EPA Chem Code: 129048	Pending					Referred to HCPRC by RFDC.
Terbacil CAS No. 5902-51-2 EPA Chem Code: 012701	E					
Terbufos CAS No. 13071-79-9 EPA Chem Code: 105001	E					
Terbutylazine CAS No. 5915-41-3 EPA Chem Code: 080814	D	Benign interstitial cell tumors of the testes (M), mammary gland carcinomas (F); Tif:RAIf rats				Assessment based on statistically significant increases in tumors in the rat, only at a dose which the HCPRC considered excessively toxic, but which were the same tumor types induced by closely related analogs.
Terbutryn CAS No. 886-50-0 EPA Chem Code: 080813	C	Mammary (adenomas/adenocarcinomas); Liver (adenomas/carcinomas) (F); Thyroid follicular (adenomas/carcinomas); Testicular interstitial cell adenoma (M); CR CD-1 mice.		Int. C		
Terrazole CAS No. 2593-15-9 EPA Chem Code: 084701	B2	Multiple tumors (liver, bile duct, mammary gland, thyroid, & testes) & cholangiocarcinoma (a rare tumor); Sprague-Dawley rats (M & F)	7.2 E-2 (M) 5.4 E-3 (F)			
Tetrachloroethane, 1,1,2,2- CAS No. 79-34-5 EPA Chem Code: 078601	C (CRAVE)	Hepatocellular carcinomas; B6C3F1 mice (M & F).	2.0 E-1 (O) 5.8 E-5 (I)		C	This assessment is located on IRIS. OPP has not reviewed this chemical.

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Tetrachlorvinphos (Gardona) CAS No. 961-11-5 EPA Chem Code: 083701	C(q)	Hepatocellular carcinomas & combined adenomas/carcinomas; B6C3F1 mice (F). Thyroid C-cell adenomas & adrenal pheochromocytomas; Sprague-Dawley rats (M).	1.83 E-3			
Tetramethrin CAS No. 7696-12-0 EPA Chem Code: 069003	C	Interstitial cell adenomas in the testes (M); CR CD-1 & CRCD Sprague-Dawley, Long-Evans Hooded rats				
Thallium(I) sulfate CAS No. 7446-18-6 EPA Chem Code: 080001	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans or animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Thiazopyr (MON 13200) CAS No. 117718-60-2 EPA Chem Code: 129100	C	Statistically significant increase in thyroid follicular cell tumors (M). Increases in renal tubular adenomas (M & F); however statistically significant positive trend in females only; Sprague-Dawley rats				
Thiobencarb (Bolero) CAS No. 28249-77-6 EPA Chem Code: 108401	D					
Thiodicarb (Larvin) CAS No. 59669-26-0 EPA Chem Code: 114501	B2	Liver tumors (malignant & benign); CD-1 mice (M & F). Testicular interstitial cell tumors; Sprague-Dawley rat (M).				HCPRC recommended that for the purpose of risk characterization, a Margin of Exposure (MOE) methodology be used for the estimation of human risk, based on hepatocellular combined adenoma/carcinoma in mal mice.
Thiram CAS No. 137-26-8 EPA Chem Code: 079801	Pending					Referred to HCPRC by RFDC.
Toluene CAS No. 108-88-3 EPA Chem Code: 080601	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans & inadequate animal data. This assessment is located on IRIS. OPP has not reviewed this chemical.
Toxaphene (Campechlor) CAS No. 8001-35-2 EPA Chem Code: 080501	B2 (CRAVE)	Hepatocellular carcinomas & neoplastic nodules (adenomas); B6C3F1 mice (M & F). Thyroid tumors (adenomas & carcinomas); Osborne-Mendel rats (M & F).	1.1 E+0 (0) 3.2 E-4 (1)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
Triadimefon (Bayleton) CAS No. 43121-43-3 EPA Chem Code: 109901	C	Borderline statistically significant increase thyroid adenomas; Wistar rats (M). Hepatocellular adenomas; NMRI mice (M & F)				HCPRC concluded that for the purpose of risk characterization, the RfD approach should be used for quantification of human risk.
Triadimenol (Baytan) CAS No. 55219-65-3 EPA Chem Code: 127201	C	Liver (hepatocellular adenomas); CF1/W74 mice (F).		C		

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Triallate CAS No. 2303-17-5 EPA Chem Code: 078802	C	Hepatocellular carcinomas (M); Positive trend & a borderline significant increase in these tumors in females; B6C3F1 mice.	8.32 E-2	D		HCPRC requested the female mouse carcinogenicity study be repeated because the dosing was inadequate. If the Registrant decides not to repeat the study, the existing Q* based on tumor data in male mice will be applied.
Triasulfuron (Amber) CAS No. 82097-50-5 EPA Chem Code: 128985	E					
Tribenuron methyl (Express) CAS No. 101200-48-0 EPA Chem Code: 128887	C	Mammary gland adenocarcinomas; Sprague-Dawley rats (F).		D	Pend.	
Tribuphos (DEF) CAS No. 78-48-8 EPA Chem Code: 074801	Interim C(q)	Liver (hemangiosarcoma) (M), Lung (alveolar/bronchiolar adenoma) (F), Small intestine (adenocarcinoma) (M & F); CD-1 mice.				This is an interim classification, pending completion and review of an acceptable carcinogenicity study in the rat.
Trichlorfon (Trichlorphon) CAS No. 52-68-6 EPA Chem Code: 057901	E					
Trichlorobenzene, 1,2,4- CAS No. 120-82-1 EPA Chem Code: 081101	D (CRAVE)				D	Assessment based in lack of data concerning carcinogenicity in humans & inadequate animal data. This assessment is located on IRIS. OPP has not reviewed this chemical.
Trichloroethane, 1,1,1- CAS No. 71-55-6 EPA Chem Code: 081201	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans & inadequate animal data. This assessment is located on IRIS. OPP has not reviewed this chemical.
Trichloroethane, 1,1,2- CAS No. 79-00-5 EPA Chem Code: 081203	C (CRAVE)	Hepatocellular carcinomas (M & F) and pheochromocytomas (F); B6C3F1 mice	5.7 E-2 (O) 1.6 E-5 (I)		C	This assessment is located on IRIS. OPP has not reviewed this chemical.
Trichlorophenol, 2,4,6- CAS No. 88-06-2 EPA Chem Code: 064212	B2 (CRAVE)	Lymphomas or leukemias; F344 rats (M). Hepatocellular adenomas or carcinomas; B6C3F1 mice (M & F).	1.1 E-2 (O) 3.1 E-6 (I)		B2	This assessment is located on IRIS. OPP has not reviewed this chemical.
Triclopyr (salts & esters) CAS No. 55335-06-3 EPA Chem Code: 116001	D	Classification based on increases in mammary tumors in rats (Fischer 344) & mice (Jcl:ICR), and adrenal pheochromocytomas in male rats, which the majority of the HCPRC believed to be only marginal.				
Tridiphane (Tandem) CAS No. 58138-08-2 EPA Chem Code: 123901	C	Liver (hepatocellular adenomas, adenomas/carcinomas combined); B6C3F1 mice (F)				

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Triflumizole CAS No. 08694-11-1 EPA Chem Code: 128879	E					
Trifluralin (Treflan) CAS No. 1582-09-8 EPA Chem Code: 036101	C(q) 3 (IARC)	Thyroid (follicular cell adenomas & carcinomas); Neoplasms of the renal pelvis (M); Benign urinary bladder tumors (F); Fischer 344 rats.	7.7 E-3		C	CRAVE Q* = 7.7 E-3
Triflurosulfuron-methyl CAS No. 126535-15-7 EPA Chem Code: 129002	C	Testicular interstitial cell adenomas; CD-1 rat (M).				HCPRC recommended that for the purpose of risk characterization, the Reference Dose (RfD) approach should be used for quantitation of human risk.
Triphenyltin hydroxide CAS No. 76-87-9 EPA Chem Code: 083601	B2	Pituitary gland adenoma (F); Leydig cell tumors (M); Wistar rat. Hepatocellular adenomas (M & F); combined hepatocellular (adenoma &/or carcinoma) (F); NMRI mice.	2.8 E-0	B2		
Troysan polyphase (IPBC) CAS No. 55406-53-6 EPA Chem Code: 107801	Not Likely					
UDMH CAS No. 57-14-7 EPA Chem Code: 600018	B2	Multiple sites (eg. lungs, vessels, liver & kidney); Multiple species, strains & studies.	4.6 E-1 (M) 3.1 E-1 (F)	Defer.		UDMH is the metabolite/breakdown product of Daminozide (Alar). [Syn. unsymmetrical 1,1-dimethylhydrazine]
UMP-488 (PAL 6000) CAS No. 111578-32-6 EPA Chem Code: 129025	E					
Uniconazole (Prunit) CAS No. 83657-22-1 EPA Chem Code: 128976	C	Hepatocellular adenomas, carcinomas & adenomas/carcinomas combined; CD-1 mice (M)				
Vinclozolin (Ronilan) CAS No. 50471-44-8 EPA Chem Code: 113201	B2	Statistically significant increases in multiple tumor types in males and ovarian tumors in F; Wistar rats.				HCPRC concluded that for the purpose of risk characterization, a non-linear approach - Margin of Exposure (MOE) should be used for quantitation of human risk.
White phosphorus CAS No. 7723-14-0 EPA Chem Code: 066502	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans or animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Xylenes CAS No. 1330-20-7 EPA Chem Code: 086802	D (CRAVE)				D	Assessment based on lack of data concerning carcinogenicity in humans & inadequate animal data. This assessment is located on IRIS. OPP has not reviewed this chemical.

CHEMICAL	CURRENT OPP CLASSIFICATION	TUMOR TYPE / SPECIES	POTENCY Q* VALUE	SAP CLASS	CRAVE CLASS	COMMENTS
Zinc and compounds CAS No. 7440-66-6 EPA Chem Code: 129015	D (CRAVE)				D	Assessment based on inadequate evidence in humans & animals. This assessment is located on IRIS. OPP has not reviewed this chemical.
Zineb CAS No. 12122-67-7 EPA Chem Code: 014506	3 (IARC)					

EPA WEIGHT-OF-THE EVIDENCE CATEGORIES

- Group A - Human carcinogen
- Group B - Probable human carcinogen
 - B1 - Indicates limited human evidence
 - B2 - Indicates sufficient evidence in animals and inadequate or no evidence in humans
- Group C - Possible human carcinogen
- Group D - Not classifiable as to human carcinogenicity
- Group E - Evidence of noncarcinogenicity for humans

PROPOSED EPA WEIGHT-OF-THE EVIDENCE CATEGORIES

Known/Likely - This category of descriptors is appropriate when the available tumor effects and other key data are adequate to convincingly demonstrate carcinogenic potential for humans.

Cannot Be Determined - This category of descriptors is appropriate when available tumor effects or other key data are suggestive or conflicting or limited in quantity and, thus, are not adequate to convincingly demonstrate carcinogenic potential for humans.

Not Likely - This is the appropriate descriptor when experimental evidence is satisfactory for deciding that, there is no basis for human hazard concern.

IARC CATEGORIES

- Group 1 - The agent (mixture) is carcinogenic to humans
- Group 2A - The agent (mixture) is probably carcinogenic to humans
- Group 2B - The agent (mixture) is possibly carcinogenic to humans
- Group 3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity
- Group 4 - The agent (mixture, exposure circumstance) is probably not carcinogenic to humans

ACRONYMS

- CAG - Cancer Assessment Group
- CRAVE - Carcinogen Risk Assessment Verification Endeavor
- Def. - Deferred
- Defer. - Deferred
- F - Female
- HCPRC - Health Effects Division Carcinogenicity Peer Review Committee
- HED - Health Effects Division
- (I) - Inhalation (ug/cu.m)
- IARC - International Agency for Research on Cancer, World Health Organization
- Int. - Interim
- IRIS - Integrated Risk Information System
- M - Male
- (O) - Oral (mg/kg/day)
- OPP - Office of Pesticide Programs
- ORD - Office of Research and Development
- Pend. - Pending
- RFDC - Health Effects Division Reference Dose/Peer Review Committee
- SAP - FIFRA Scientific Advisory Panel
- SAB - Scientific Advisory Board

